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## NEW ARRIVALS

[ We will be publishing a short introduction to the Books we receive from Publishers. The detailed *Review* will be published in due course in our regular Book Review Section—Ed.]

### **Quadratic Forms in Random Variables—Theory and Applications** (Statistics : Text Books and Monograph Series, Vol 128)

by A M Mathai and Serge B Provost  
Marcel Dekker : New York, 1992, ISBN 0-8247-8691-2  
xix + 400 pages, illustrated, hard cover, price \$ 126.50

This book contains some material on quadratic forms in random variables. Chapters 1 and 2 are on mathematical preliminaries of essential matrix algebra and properties of quadratic forms. Various representations of quadratic forms are discussed in Chapter 3. Chapter 4 deals with the distributions of quadratic forms and second degree polynomial. Chapter 5 is devoted to chi-squaredness and independence. Chapter 6 generalize the results of Chapters 3, 4 and 5 to the corresponding matrix versions. Even though Chapter 7 is called an Applications though no specific problem is discussed in detail.

These book is developed as a reference book for theoretical as well as applied statisticians.

KANIKA RAY

### **Difference Equations and Inequalities : Theory, Methods and Applications** (Pure and Applied Mathematics : A Series of Monographs and Text books, Vol 155)

by Ravi P Agarwal  
Marcel Dekker : New York, 1992, ISBN 0-8247-8676-9  
xiii + 777 pages, illustrated, hard cover, price \$ 172.50

The difference equations appear in almost all fields of scientific disciplines ranging from physics to sociology. The present book is devoted to the theory and applications of difference equations and equalities. The book is divided into twelve chapters. It discusses linear initial value problems, miscellaneous difference equations, difference equalities, qualitative properties of solutions of difference equations, boundary value problems for linear and nonlinear systems and higher order difference equations, Sturm-Liouville problems and related inequalities, difference equalities in several independent variables. The treatment is fairly exhaustive covering more than 400 recent research publications.

D S RAY

## **Theory of Structured Multiphase Mixtures**

(Lecture Notes in Physics, Vol 372)

by Flavio Dobran

Springer-Verlag : Berlin, 1991, ISBN 3-540-53564-0

ix + 223 pages, hard cover, price DM 42.00

This book on structured multiphase mixtures is divided into eight chapters. Chapters 1 summarizes the historical milestones leading to the development of the models of multiphase mixtures. The development of the theory is carried out in chapter 2. In chapter 3 this is continued on the basis of very general principles of material deformation. The field equations have been discussed in chapter 4. Some of their special cases have been discussed in chapter 5. Chapter 6 includes the development of constitutive theory which has been used in next two chapters.

D S RAY